

What is claimed is:

1. A chipper-shredder machine for yard waste, comprising:  
a motor;  
a roller operatively driven by the motor;  
5 an inlet chute to feed yard waste to the roller so as to grind the yard waste into mulch; and  
an outlet chute to receive the mulch from the roller.
2. The machine of claim 1 wherein the roller includes a plurality of teeth to feed the  
waste through the roller.
- 10 3. The machine of claim 1 wherein the roller has a torque of at least 2000 lb-in.
4. The machine of claim 3 wherein the roller operates at a speed of approximately 60  
rpm.
- 15 5. The machine of claim 1 further comprising a speed reducer between the motor and  
the roller.
6. The motor of claim 1 wherein the motor is reversible.
- 20 7. The motor of claim 1 wherein the outlet chute is spring loaded to reduce jams in the  
roller.
8. The machine of claim 1 wherein the motor is electric.
- 25 9. The machine of claim 8 wherein the motor has an output power of approximately 1  
to 2 horsepower.
10. The machine of claim 1 wherein the roller has two sets of differently shaped teeth  
30 to enhance grinding of the yard waste.

11. A yard material mulching machine comprising:  
a feed chute with opposite inlet and outlet ends, and along which the yard material flows;  
a roller adjacent the feed chute; and  
a motor for rotating the roller such that the yard material is crushed between the roller and  
5 the feed chute and thereby reduced into mulch.
12. The machine of claim 11 wherein the motor has a torque of at least 2000 lb-in.
13. The machine of claim 12 wherein the roller operates at a speed of approximately 60  
10 rpm.
14. The machine of claim 11 further comprising a speed reducer between the motor and  
the roller.
- 15 15. The machine of claim 11 wherein the motor is reversible.
16. The machine of claim 11 wherein the feed chute is spring loaded to reduce jams in  
the roller.
- 20 17. The machine of claim 11 wherein the motor is electrically powered.
18. A method of reducing yard waste material into mulch, comprising:  
feeding the yard waste material into a chute;  
crushing and grinding the yard waste material with a rotating roller; and  
25 discharging the crushed yard waste material.
19. The method of claim 18 wherein the roller is operated at low speed and high torque.
20. The method of claim 19 wherein the roller rotates at approximately 60 rpm.  
30
21. The method of claim 19 wherein the roller has a torque of at least 2000 lb-in.

22. The method of claim 18 wherein the material is reduced to mulch without using cutting or impact blades.

5 23. The method of claim 18 further comprising rotating the roller in a first direction for mulching and rotating the roller in an opposite direction for unclogging a jam.

24. The method of claim 18 further comprising resiliently biasing the chute toward the roller with springs.

10

25. The method of claim 18 further comprising rotating the roller with an electric motor.

26. The method of claim 18 further comprising rotating the roller in opposite directions  
15 with a reversible motor.